

## PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2001-029306

(43)Date of publication of application : 06.02.2001

(51)Int.Cl.

A47L 17/00

A47J 47/16

A47L 15/44

B08B 1/02

B08B 3/12

(21)Application number : 11-204101

(71)Applicant : TOTO LTD

(22)Date of filing : 19.07.1999

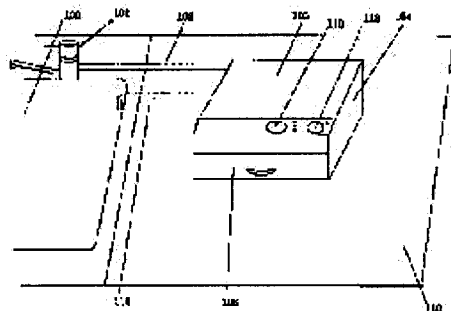
(72)Inventor : SEKI HIROYUKI  
KUMAMOTO YASUHIRO

### (54) KITCHEN KNIFE AND CHOPPING BOARD WASHING DEVICE

(57)Abstract:

**PROBLEM TO BE SOLVED:** To easily wash and sterilize a kitchen knife and chopping board without requiring laborious labor by washing the kitchen knife and chopping board by using a physical washing means and a device which forms sterilizing water having hypochlorous acid by electrolyzing clean water and a solution formed by adding an electrolyte to the clean water.

**SOLUTION:** The kitchen knife and chopping board washing device 104 is a type to be horizontally laid and installed onto a kitchen working surface. At the time of cooking, a slide table 106 is drawn out and the kitchen knife and chopping board are used in the state of placing the same on this slide table 106. After use, the kitchen knife is placed on a kitchen knife hook and the slide table 106 is withdrawn. A water feed section connects a juncture branched from a faucet 101 and the washing device 104 with a water feed hose 102 by an instant coupler, etc. The sterilizing water forming section within the kitchen knife and chopping board washing device 104 executes sterilization by forming the electrolytic water having the hypochlorous acid by electrolyzing the clean water or the solution formed by adding brine to the clean water in an electrolytic cell and spraying this water to the kitchen knife and the chopping board.



**\* NOTICES \***

JPO and INPIT are not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. \*\*\*\* shows the word which can not be translated.
3. In the drawings, any words are not translated.

---

**CLAIMS**

---

[Claim(s)]

[Claim 1] A kitchen knife and a cutting board washing station provided with a sterilizing water generation part and a cleaning function part using sterilizing water.

[Claim 2] A kitchen knife and the cutting board washing station according to claim 1, wherein the above-mentioned sterilizing water is electrolytic water generated by a waterworks or waterworks by electrolyzing a solution which added an electrolyte.

[Claim 3] A kitchen knife and the cutting board washing station according to claim 2 using salt as the above-mentioned electrolyte.

[Claim 4] A kitchen knife and a cutting board washing station given in claims 2 and 3, wherein the above-mentioned electrolytic water carries out PH adjustment.

[Claim 5] A kitchen knife and the cutting board washing station according to claim 1 to 4 carrying and placing a kitchen knife and a cutting board, having a possible drawer part, and making the drawer part concerned into storage and a withdrawal structure with a slide to cleaning function circles.

[Claim 6] A kitchen knife and the cutting board washing station according to claim 1 to 4 provided with structure where a stand can open a kitchen knife and every cutting board \*\*\*\* and close in the state of the handstand close and level open to said case in what installs a case provided with a cleaning sterilization function part in the state every length.

[Claim 7] A kitchen knife and the cutting board washing station according to claim 1 to 4 washing where it has an entry of a kitchen knife or a cutting board and a kitchen knife and a cutting board are fitted over an entry.

[Claim 8] A kitchen knife and the cutting board washing station according to claim 5 to 7 becoming the structure where a cleaning function part and a sterilizing water generation part are separable.

[Claim 9] Claims 1-4 provided with a means which enables washing of a washed object by scanning a base part to a means and a washed object side whose washing is enabled by having an entry and fitting a kitchen knife over an entry, and a kitchen knife and a cutting board washing station given in 7 and 8.

[Claim 10] A kitchen knife and a cutting board washing station given in claims 5, 6, 7, and 9 provided with a means to detect what a kitchen knife and a cutting board were stored for by main part.

[Claim 11] A kitchen knife and the cutting board washing station according to claim 1 to 10 provided with a means which can choose operation of washing, sterilization, and a drying function.

[Claim 12] A kitchen knife and the cutting board washing station according to claim 1 to 11 provided with a function which carries out sterilization cleaning of the inside of a device automatically.

[Claim 13] A kitchen knife, a kitchen knife and a cutting board washing station given in claims 7 and 9 equipping a cutting board entry with an opening-and-closing mechanism of a door.

[Claim 14] A system which bypasses a sterilizing water generation part and lets a waterworks flow — a kitchen knife and the cutting board washing station according to claim 1 to 13 provided with a way.

[Claim 15] A kitchen knife and the cutting board washing station according to claim 14 provided with a means which switches a water flow system way for letting sterilizing water or a waterworks flow.

[Claim 16] A kitchen knife and the cutting board washing station according to claim 1 to 15 provided with a detergent spraying function part.

[Claim 17] A kitchen knife and a cutting board washing station given in claims 11, 12, 13, and 16 provided with a drying function part.

[Claim 18] A kitchen knife and the cutting board washing station according to claim 1 to 17 equipping a draining part with a sensor for detecting a soiling degree of water.

**\* NOTICES \***

JPO and INPIT are not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. \*\*\*\* shows the word which can not be translated.
3. In the drawings, any words are not translated.

---

**DETAILED DESCRIPTION**

---

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to a kitchen knife and a cutting board washing station provided with the cleaning function part which removes the electrolytic water generation part and dirt which have a cell which electrolyzes the solution which added the electrolyte to the waterworks or the waterworks, and generates electrolytic water.

[0002]

[Description of the Prior Art] Usually, in order to cut foods, use a kitchen knife and a cutting board, but in a cutting board. since various foods, such as meat, a fish, and vegetables, are cut and an oil, a smell, juice, coloring matter, bacteria, etc. adhere, washing in cold water and a detergent wash during cooking, but bacteria etc. enter and become blackish in crevices, such as a crack on the surface of a cutting board, — etc. — it will adhere inevitably. He attaches to the chlorine-based detergent in such a case overnight, and was trying to wash in cold water by performing bleaching and sterilization in the former.

[0003]

[Problem(s) to be Solved by the Invention] When cutting different foods like the former, after cutting especially meat and a fish, The oil and the smell adhered, and in washing in cold water, whenever it changed the foods cut in order to prevent the cut kudzu between the foods which the kitchen knife and the cutting board were washed using the detergent since dirt was not able to come off easily, but are cut, and stinking thing shift adhesion, when it washed, it had taken time and effort. moreover — being unable to remove thoroughly the dirt and the bacteria which entered the crevice on the surface of a cutting board, and becoming blackish — etc. — it is the cause. The kitchen knife and cutting board which touch various foods as the source of infection of the bacteria of food poisoning were pointed out, and in order to prevent infection between foods, the means which sterilizes and washes a kitchen knife and a cutting board simply whenever it changes foods was needed.

[0004] In order to perform removal of this darkening, and sterilization, it attached, placed, washed and carried out using the chlorine-based detergent with powerful bleaching and sterilizing properties, etc., and was made KIREI, but the pungent smell was strong, and it was serious that a temper worsened especially in the bad kitchen of ventilation etc. It has the problem of being unable to take an odor of chlorine easily after the end of bleaching / sterilization, even if it washes in cold water, and had taken time and effort. Then, this invention is accomplished in order to solve such a technical problem, and it is in providing the kitchen knife and cutting board washing station which can be washed and sterilized easily without applying troublesome time and effort.

[0005]

[Means for Solving the Problem] This invention is electrolyzing a solution which added an electrolyte to physical cleaning means (brush sponge, an ultrasonic wave, etc.), a waterworks, or a waterworks for removing dirt of a kitchen knife and a cutting board, is provided with a device which generates sterilizing water which has hypochlorous acid, and sterilizes mold, bacteria, etc. since generated electrolytic water is generated by only water and salt solution, it is neutralized after 2 sterilization which does not almost have a smell, and there is no residual property like three drugs which return to the original state immediately etc. — it has the feature, and it can be used, there not being influence on the body and influence on environment, either, and feeling easy.

[0006]

[Embodiment of the Invention] Drawing 1 explains one example of this invention. The kitchen knife and cutting board washing station of drawing 1 are types which are used as a kitchen counter every width and installed in it, when cooking, it pulls out the slide table 106 and the kitchen knife 108 and the cutting board 107 are used for it in the state where it put on the slide table 106. After use puts the kitchen knife 108 on the kitchen knife hook 109, and since it is considered as the structure which puts the slide table 106 in order, it can secure the space of a kitchen counter. A water supply part is taken as the method of connecting the terminal area which branched from the faucet 101, and the washing station 104 with a one-touch coupler etc. with the water supply hose 102. Although not illustrated on this drawing, water may be supplied from the multipoint connection member attached to the faucet spout. It has the exhaust hose 111 for draining into a sink the water which washed and sterilized the kitchen knife and the cutting board.

[0007]Next, it explains per the cleaning function part included in a kitchen knife and 104 in a cutting board washing station, and sterilizing water generation part. First, in order to have a physical cleaning means by an ultrasonic wave, brush sponge, etc., to become dirty further, in order that dirt may not come off only by spraying water at the time of washing, although it is about a cleaning function part, and to improve omission, it may have a function which sprinkles a detergent.

[0008]Next, although it is about a sterilizing water generation part, the solution which added the salt solution to the waterworks or the waterworks is electrolyzed with a cell, the electrolytic water which has hypochlorous acid is generated, and it is made to sterilize by watering to a kitchen knife and a cutting board. Here, although electrolytic water is mentioned as the example, it may be ozone water, metal ion water, etc. with disinfection. After washing a kitchen knife and a cutting board, it may have a drying function part so that it can be kept as it is.

[0009]Next, although easy operation is explained, the washing course selecting switch 112 attached to the kitchen knife and the cutting board washing station 104 is pushed, and the washing course of hope is chosen. For example, only in 2 sterilization, as a course, only 1 washing is 3 washing + sterilization. 4 washing + sterilization + desiccation It is convenient, if some are like and you use properly under cooking or by the end back of cooking. Next, the slide table 106 in which the unclean cutting board and kitchen knife got is stored to the washing station 104. It is made to stop automatically after operation is started and completed according to the course chosen when it detected that the slide table 106 was stored by the opening-and-closing detection sensor.

[0010]The sensor which detects the soiled state of wastewater is attached near the exhaust port, and it is made to control washing motion based on the signal from a sensor. what carried out this function to the wash tableware dryer at integral construction although this device was an equipment configuration which can be used independently — or, Since water can be supplied from the wash tableware dryer which may be a device of the structure which it had as [ attach / by post-installation ], and does not need to take a setting position, It may be a product which uses for washing of tableware or prevents the mold in a tableware washing tank, and generating of slime by supplying the generated sterilizing water which becomes unnecessary to connect a water supply hose separately not only to a kitchen knife and a cutting board but to the wash tableware dryer side.

[0011]Next, another example is described using drawing 3. The kitchen knife and cutting board washing station of drawing 3 are types which are used as a kitchen counter every length and installed in it, when cooking, it is in the state which opened the table 204 and was put on the table 204, and kitchen knife 206 and the cutting board 205 are used for it. After use puts the kitchen knife 206 on the kitchen knife hook 207, makes it the structure which closes the table 204, and in order to store in every length, it has the feature which does not become obstructive but is easy to use in the kitchen without an installing space. In addition, since it is the same as that of the type of drawing 1 about composition and operation, explanation shall be omitted.

[0012]Next, another example is described using drawing 5. As for the kitchen knife and cutting board washing station of drawing 5, the kitchen knife entry 301 and the cutting board entry 307 are separate, and washing will be made to be performed if a kitchen knife or a cutting board is fitted over each entry. The water supply part has the same composition as what it was supplied with the water supply hose 309, and was explained by drawing 1. It has the exhaust hose 310 for draining into a sink the water which washed and sterilized the kitchen knife and the cutting board as well as drawing 1.

[0013]Next, it explains per the cleaning function part included in a kitchen knife and 300 in a cutting board washing station, a sterilizing water generation part, and drying function part. First, only by spraying water at the time of washing, although it is about a cleaning function part, since dirt cannot come off easily, what

was provided with the physical cleaning means by an ultrasonic wave, brush sponge, etc., and was provided with the function which sprinkles a detergent further in order to improve dirt omission may be used.

[0014]Although it is about sprinkling nozzles, it has provided independently with the object for kitchen knives, and the object for cutting boards, and about the object for kitchen knives, there is a nozzle by contrast to the opening 301, and it has fitting structure which is sprinkled towards the bottom from a top. About the object for cutting boards, the upper surface and the undersurface of a cutting board have a nozzle, and it has become the cutting board move direction with fitting structure which is sprinkled perpendicularly.

[0015]Next, although it is about a sterilizing water generation part, the solution which added the salt solution to the waterworks or the waterworks is electrolyzed with a cell, the electrolytic water which has hypochlorous acid is generated, and it is made to sterilize by sprinkling to a kitchen knife and a cutting board.

[0016]Next, although it is about a drying function part, are based on warm air, but this device, Since he would like to change into the state where it makes to perform washing and sterilization easily into a key objective, and can use immediately during cooking, it is dry by the method which blows away the waterdrop which has adhered by the high-speed blowing air. Even if it has not got dry thoroughly, when using it, it is a level which does not interfere at all.

[0017]Next, although easy operation is explained, a course is chosen with the course selecting switch 316 attached to the kitchen knife and the cutting board washing station 300. as a course — 1 — washing + dry 2 sterilization + dry 3 washing + sterilization + desiccation etc. — it is convenient if you use it, being and using properly under cooking or by the end back of cooking. A function that a washing course comes to change whenever it pushes a switch, for example, it pushes once (washing + desiccation) is chosen, and display LED and washing LED302 and dry LED304 which show that it was chosen turn on this selecting switch 316. Whenever it pushes, it is made for a washing course to change as display LED, and sterilization LED303 and dry LED which a function that it pushes once again (sterilization + desiccation) is chosen, and show that it was chosen light up.

[0018]Of course, a switch for exclusive use is respectively formed in washing, sterilization, and a drying function, and it may enable it to choose a function to use as it. It is not necessary to push each time and what is necessary is just to push this selection course 316 to change a course. Therefore, if a kitchen knife and a cutting board are inserted, it is usually in the state where it can use immediately.

[0019]Next, the case where a kitchen knife is washed is explained. If a kitchen knife is inserted in the opening 301, it will detect having been inserted by the detection sensors (infrared rays, an ultrasonic wave, a limit switch, etc.) built into the kitchen knife and the cutting board washing station 300, and washing motion will start it according to the selected course. After washing motion finishes, it tells that completion LED305 was lit up and completed. If it completes as a means to tell completion so that a buzzer may report, a kitchen knife is taken out and it can use for cooking immediately.

[0020]Next, the case where a cutting board is washed is explained. If a cutting board is fitted over the entry 307, with the detection sensors (infrared rays, an ultrasonic wave, a limit switch, etc.) built into the kitchen knife and the cutting board washing station 300. If having been inserted is detected, the roller 315 begins rotation, and the washing motion according to a selection course will start, sending a cutting board.

[0021]Sending with the roller 315, if the cutting board 311 is fitted over the cutting board entry 307, a cutting board will usually overflow [ washing and sterilization, and ] a device so that it will dry, and may come out and may take out from the cutting board output port 317, but the prevention door 312 for water scattering protects scattering of the water to the exterior in that case. In the cutting board of small size, in a device, it may be stored thoroughly and then, If send the cutting board 311 with the roller 315, the roller 315 will be once stopped if stored in a device, washing, sterilization, and desiccation are performed and it completes to desiccation, the roller 315 is operated again and it may be made to take it out from the cutting board output port 317.

[0022]If the cutting board 311 is stored in a device with the roller 315, and washing, sterilization, and desiccation will be performed and it will complete, counterrotation of the roller 315 is carried out and it may be made to take it out from the cutting board entry 307 in the thing of the structure to which the cutting board opening 307 and output port were made to serve a double purpose. Normal rotation and an inversion are repeated for the roller 315, and it may be made to operate about multiple-times washing, sterilization, and desiccation.

[0023]After washing motion finishes, completion LED305 lights up and tells having ended. As a completion

informing means, it may be a buzzer, and if it completes, a cutting board is taken out and it can use for cooking immediately. It has the door 312,313 for water preventing scattering, and water is kept from scattering out of a device during washing. The kitchen knife entry 301, the cutting board entry 307, and the output port 317 are equipped with the opening-and-closing mechanism of the door, and the door of the kitchen knife entry 301 serves as a sliding type, and if the door opening switch 306 is pushed, it has structure which a door opens.

[0024]Next, the cutting board buck 308,314 serves as the door of the cutting board entry 307 and the output port 317, if a buck is stored by 300 in a device, it becomes instead of a door, and it has structure which will be opened if the door opening switch 306 is pushed. The door of the kitchen knife entry 301, the cutting board entry 307, and the cutting board output port 317 is interlocking, and when opening a door, if the door opening switch 306 is pushed, all will open it.

[0025]When closing, it is lowering the close lever 318 manually, and has structure which closes all the doors. Of course, it may be a thing of the structure which carries out a switching action independently. If the close lever 318 is lowered and a door closes, in order to flush the washing residues (washing dregs, a detergent, etc.) which remain in the device, As operation which performs washing and sterilization automatically and is dried is performed, generating of mold and slime is prevented, and it is always made to change the inside of a device into a clean state.

[0026]Next, another example is described using drawing 7. The kitchen knife and the cutting board washing station of drawing 7 are having structure where the device 400 provided with the cleaning function part and the device 408 provided with the sterilizing water generation part are separable. When using it where one is used, when washing s kitchen knife, and washing a cutting board, it is made to use it, dissociating. Although the cutting board is raised by this example as a subject washed by the washing section with which the undersurface of this device 400 is equipped, it may be in a platter and a sink which do not go into a \*\*\*\* soaping machine etc.

[0027]This device provides a sterilizing water generation part in the lower berth, has the composition that a waterworks is supplied with the water supply hose 409, electrolyzed with the cell the solution which added the salt solution to the waterworks or the waterworks, and is provided with the function which generates the electrolytic water which has hypochlorous acid. The cleaning function part was provided in the upper row, and it is equipped with the physical cleaning means by an ultrasonic wave, brush sponge, etc.

[0028]Attachment and detachment of the cleaning function part of the upper row, and the sterilizing water generation part of the lower berth, May enable it to always detach and attach only with the structure of putting a cleaning function part on the upper row, and. It may be made the structure which cannot be separated until charge is completed until the tank as which the structure which can be separated if an upper row part and a lower-berth part will be locked, and it will not illustrate if it carries, but a lock release button is pushed may be sufficient, and which is storing sterilizing water further is filled to the brim with water or. It has the cell which is a power supply required in order to operate the tank and cleaning function part which store the sterilizing water sprinkled during washing and which can be charged.

[0029]Next, if a kitchen knife is fitted over the kitchen knife entry 407, it detects having been inserted by the detection sensors (infrared rays, an ultrasonic wave, a limit switch, etc.) built into the kitchen knife and the cutting board washing station 400, and is made for washing motion to start, when washing a kitchen knife, although easy operation is explained. While washing display LED403, the light is made to switch on, and if washing is completed, it is made to put out the light as a displaying means for telling that it is under washing. It may be made to tell about with a buzzer, a sound, etc. as an informing means in that case. Next, the water which carried out kitchen knife washing has composition drained into a sink from the exhaust hose 410 via the inside of the sterilizing water generation part 408 of the lower berth.

[0030]By the way, if it checks by the displaying means 404 which tells the residue in a sterilizing water storage tank, and there are few residues and the operation switch 405 will be grasped when performing cutting board washing, the sterilizing water generated in the lower berth will be sucked up by the tank. It may be the structure which put the slit into the main part exterior so that the electrical and electric equipment might not be used as a residual quantity display means although LED, liquid crystal display, etc. may be sufficient, but a tank might appear.

[0031]What it was made to perform automatically may be used for the water works of a tank. If a tank fills, the cleaning function part 400 of an upper row part will be removed, this device will be put on a cutting board, washing motion starts, sprinkling the sterilizing water which entered in the tank by pushing the operation switch 405, and it washes, making it slide with hand control with the roller 411 currently attached

to this device. If the operation switch 405 operates and is detached by grasping a switch, it will stop. A backwashing rate and water quantity come to change with the quantity which a switch grasps. Of course, you may be not variable but immobilization.

[0032]The kitchen knife entry 407 is equipped with the door opening closed mechanism of the sliding type. This door has structure which will be opened if the door opening switch 401 is pushed, and when closing, it is making the close lever 402 slide manually, and it has structure which closes a door. When a door is closed, it is made to perform occurrence prevention of the mold and slime which is easy to generate in a device as performs operation which washes the inside of a device automatically.

[0033]Next, although feed water was a structure provided with the hose which supplies water by connection with a hose and drains the tee and device from a faucet into a sink separately, the structure where it has explained until now although the graphic display has not been carried out, Hose connection is provided with the tank in the device by being unnecessary and the type which can be carried, and you may be a thing of the structure which took the water supply method by a tank. In that case, the tank incorporated in a device may be provided with a water tank and a waste water tank from the gestalt, size cost, etc. of goods, and may also be only a water tank.

[0034]Next, although the lineblock diagram of drawing 9 is explained, this composition is a schematic illustration showing an example of drawing 1 – the internal configuration of four, and explains the easy composition for below. This example of composition generates sterilizing water by the sterilizing water generation part 502, without adding an electrolyte. According to the setpoint signal from the final controlling element 504, via the cleaning function part 505 (the ultrasonic oscillation function part is incorporated in this example), the sterilizing water generated by the sterilizing water generation part 502 waters from the nozzle 507 and the nozzle 508, and performs washing and sterilization of a kitchen knife and a cutting board. Although the nozzle 507 and the nozzle 508 may be immobilization, they may be a thing of the structure to rotate or structure which moves vertically and horizontally.

[0035]The composition which supplies an electrolyte to the electrolyte mixing parts 512 by the electrolyte feed pump 511, and supplied what was mixed with the waterworks from the electrolyte storing section 510 as shown in drawing 10 to the sterilizing water generation part 502 as composition which improves the instantaneous effect of sterilization may be used. Although basic constitution is the same as drawing 10, drawing 11 is having the PH controller 515, and it adjusts PH value of the sterilizing water supplied to the cleaning function part 505, and he is trying to change PH value at the process to which dirt is dropped, and the process to sterilize.

[0036]Next, although it is an example this indicates drawing 5 – an internal configuration given in eight to be although it is the composition about drawing 12 – 14, Basic constitution is the same as the contents explained by drawing 9 – 11, and is having had the cutting board plug primary detecting element 613 for detecting whether the kitchen knife plug primary detecting element 612 and cutting board for detecting whether the kitchen knife having been fitted over the entry of a device as a different point having been fitted over the entry of a device. In this example, it is good also as a structure which forms the mechanism in which the position of a nozzle is changed although it is considered as the lineblock diagram respectively provided with the primary detecting element and nozzle of a kitchen knife and a cutting board, and can be used by common use.

[0037]Next, although drawing 15 is explained, this is an internal configuration sectional view of drawing 6, and is a schematic diagram showing what kind of composition washing parts have. First, although the washing section of a kitchen knife is explained, If the kitchen knife 701 is inserted, although not illustrated, detect that the kitchen knife was inserted by the primary detecting element, and the sterilizing water generated by the sterilizing water generation part 711 is sprinkled from the washing nozzle 702, and wash water goes via the kitchen knife detergent drain course 703, Washing and sterilization of a kitchen knife are performed discharging from the exhaust port 713. Detecting that the cutting board was inserted by the primary detecting element, and sending [ if the cutting board 715 is fitted over the cutting board entry 716, will not illustrate, but ] the cutting board 715 with the roller 718 about the washing section of a cutting board. Sprinkling sterilizing water from the washing nozzle 705, wash water performs washing and sterilization of a cutting board, discharging from the exhaust port 713.

[0038]Next, the outline composition of a detergent spraying function part is explained using drawing 16. A detergent is beforehand thrown in from the detergent entrance slot 719, and it stores in the detergent storage tank 720, and sucks up from a tank by the feed pump 721, and prescribed period spraying is made to be carried out from the sprinkling nozzles 723 at the cutting board 715 by opening the electromagnetic

valve 722. Although not illustrated in this example, it may be made to sprinkle a detergent by the same method also as a kitchen knife. In order to make dirt easier to remove, as a preliminary washing function, a cleaning function may be made to add to a detergent spraying function part, and while brush sponge etc. wash, it may be made structure which sprinkles a detergent, and may combine to a drying function further. [0039]

[Effect of the Invention]As mentioned above, the kitchen knife and cutting board which is the tool currently used when cooking in this invention in kitchen, as explained, Although various foods were cut, it came to be able to perform easily preventing by so washing and sterilizing bacterial adhesion and the adhesion which becomes blackish with the sterilizing water generated with this device. By using salt as an electrolyte used for generation of sterilizing water, can improve sterilizing properties for them and further, Usually, from washing and sterilizing, a kitchen knife and a cutting board with the sterilizing water generated with the salt currently used for cooking. drugs — like — a hand — since there were not that, a pungent smell, and a residual property, either, it was safe also to a human body and environment, and in order to take the drugs which have adhered to the kitchen knife or the cutting board after drugs use, time and effort which is washed in cold water carefully and washed also becomes unnecessary, and could be washed and sterilized easily. If it is in a weak acidic state by adjusting PH value of electrolytic water, the effect of if it is in the state of strong-base nature (it is made easy to fall in the oil contamination which heightens a bactericidal effect by proteinic removal) (hand that which prevents metaled corrosion and heightens a bactericidal effect prevention etc.) will be acquired.

[0040]Since it can wash if a kitchen knife and a cutting board are inserted, before cutting different foods during cooking, it was the hand which became dirty from juice, oil, etc., and since it washed only by inserting even if it does not perform switching operation of the door of a soaping machine, etc., it could carry out in a short time, without applying time and effort. it is based on an oil by using a detergent by having had the detergent spraying function part, when [, such as oil contamination, ] especially water temperature is low — dirt also came to come off finely slippery. Slide table structure and every length, the washing station itself also has few installing spaces, it ends by structure etc., and a cooking space can also secure it now enough.

---

[Translation done.]



**\* NOTICES \***

JPO and INPIT are not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. \*\*\*\* shows the word which can not be translated.
3. In the drawings, any words are not translated.

---

**DESCRIPTION OF DRAWINGS**

---

**[Brief Description of the Drawings]**

[Drawing 1] It is a figure showing the state where the slide table was stored by a type, every side of a kitchen knife and a cutting board washing station.

[Drawing 2] It is a figure showing the state where the type drew out the slide table, every side of a kitchen knife and a cutting board washing station.

[Drawing 3] It is a figure showing the state where the table closed by a type, every length of a kitchen knife and a cutting board washing station.

[Drawing 4] It is a figure showing the state where the type opened the table, every length of a kitchen knife and a cutting board washing station.

[Drawing 5] It is a device of the type which washes a kitchen knife and a cutting board independently, and is a figure showing the appearance of the device seen from the side.

[Drawing 6] It is a device of the type which washes a kitchen knife and a cutting board independently, and is a figure showing the appearance of the device seen from the transverse plane.

[Drawing 7] It is a device of the type which a cleaning function part and an electrolytic water generation part separate, and is a figure showing the state at the time of kitchen knife washing.

[Drawing 8] It is a device of the type which a cleaning function part and an electrolytic water generation part separate, and is a figure showing the situation at the time of washing a cutting board.

[Drawing 9] It is a schematic illustration showing the example of 1 composition when not adding an electrolyte by drawing 1 - an internal configuration given in four.

[Drawing 10] It is a schematic illustration showing the example of 1 composition in the case of adding an electrolyte by drawing 1 - an internal configuration given in four.

[Drawing 11] It is the schematic illustration which equipped drawing 1 - 4 with PH controller by the internal configuration of the statement and in which showing the example of 1 composition.

[Drawing 12] It is a schematic illustration showing the example of 1 composition when not adding an electrolyte by drawing 5 - an internal configuration given in eight.

[Drawing 13] It is a schematic illustration showing the example of 1 composition in the case of adding an electrolyte by drawing 5 - an internal configuration given in eight.

[Drawing 14] It is the schematic illustration which equipped drawing 5 - 8 with PH controller by the internal configuration of the statement and in which showing the example of 1 composition.

[Drawing 15] It is a schematic illustration which is shown in drawing 6 and in which showing the section of a kitchen knife and a cutting board washing station.

[Drawing 16] It is a schematic illustration showing an example in which the detergent spraying function part was included in the product structure of drawing 6.

**[Description of Notations]**

100 [ -- Stand to place personal belongings ] -- A sink and 101 -- A faucet and 102 -- A water supply hose and 103

104 [ -- A cutting board and 108 / -- Kitchen knife ] -- A kitchen knife and a cutting board washing station, and 105 -- A slide rail, 106 -- A slide table, 107

109 -- A kitchen knife fixing bracket and 110 -- A kitchen counter and 111 -- Exhaust hose

112 -- A washing course selecting switch, 113 -- Driving switch

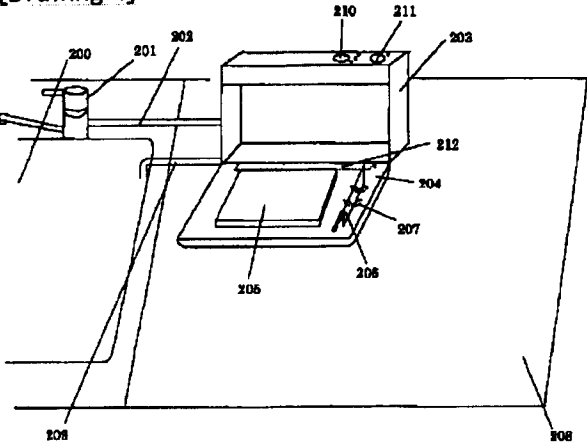
200 -- A sink and 201 -- A faucet and 202 -- Water supply hose

203 -- A kitchen knife and a cutting board washing station, and 204 -- A table and 205 -- Cutting board

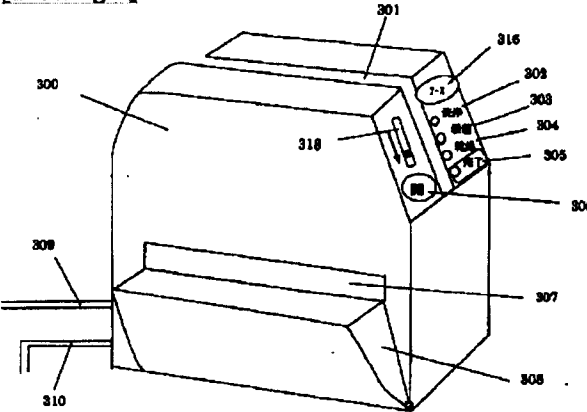
206 -- A kitchen knife and 207 -- A kitchen knife hook and 208 -- Kitchen counter  
209 -- An exhaust hose and 210 -- A course selecting switch and 211 -- Driving switch  
212 -- Falling preventive hook  
300 [ -- Sterilization operation selection display LED, 304 / -- Drying operation selection display LED,  
305 / -- Completion display LED, 306 / -- Door opening switch ] -- A cutting board and a kitchen knife  
washing station, and 301 -- A kitchen knife supplies-of-provisions mouth and 302 -- Washing motion  
selection display LED, 303  
307 -- A cutting board entry and 308 -- A cutting board buck and 309 -- Water supply hose  
310 -- An exhaust hose and 311 -- A cutting board and 312 -- Prevention door for water scattering  
313 -- The prevention door for water scattering, and 314 -- A cutting board buck and 315 -- Roller  
316 -- A washing course selecting switch and 317 -- Cutting board output port  
318 -- Door close lever  
400 -- A cleaning function part and 401 -- A door opening switch and 402 -- Door close lever  
403 [ -- A handle and 407 / -- A kitchen knife entry, 408 / -- Sterilizing water generation part ] -- LED in  
washing motion, 404 -- A tank residual quantity display and 405 -- An operation switch and 406  
409 -- A water supply hose and 410 -- An exhaust hose and 411 -- Roller  
412 -- Cutting board  
500 [ -- Control section, ] -- A water supply part, 501 -- An electromagnetic valve, 502 -- A sterilizing  
water generation part, 503  
504 [ -- Upper surface nozzle ] -- A final controlling element, 505 -- A cleaning function part, 506 -- A  
cleaning tank, 507  
508 [ -- An electrolyte feed pump, 512 / -- Electrolyte mixing parts, 513 / -- Acid water passing water  
flowing, 514 / -- The alkaline water, 515 / -- PH controller, 516 / -- Drainage pipe ] -- An undersurface  
nozzle, 509 -- An exhaust port, 510 -- An electrolyte storing section, 511  
600 [ -- Control section ] -- A water supply part, 601 -- An electromagnetic valve, 602 -- A sterilizing  
water generation part, 603  
604 [ -- Upper surface nozzle ] -- A final controlling element, 605 -- A cleaning function part, 606 -- A  
cleaning tank, 607  
608 [ -- Right nozzle ] -- An undersurface nozzle, 609 -- An exhaust port, 610 -- A left nozzle, 611  
612 -- A kitchen knife plug primary detecting element, 613 -- A cutting board plug primary detecting  
element, 614 -- Electrolyte storing section  
615 -- An electrolyte feed pump, 616 -- Electrolyte mixing parts, 617 -- Acid water passing water flowing  
618 -- Alkaline-water passing water flowing, 619 -- PH controller, 620 -- Drainage pipe  
700 [ -- A kitchen knife detergent drain course, 704 / -- The sterilizing water course for kitchen knife  
washing, 705 / -- Nozzle for cutting board washing ] -- A kitchen knife entry, 701 -- A kitchen knife, 702  
-- The nozzle for kitchen knife washing, 703  
706 -- Cutting board output port, 707 -- The sterilizing water course for cutting board washing, 708 --  
Cutting board buck, 709 [ -- An electromagnetic valve, 713 / -- An exhaust port, 714 / -- A water supply  
opening, 715 / -- A cutting board, 716 / -- A cutting board entry, 717 / -- The prevention door for water  
scattering, 718 / -- Roller ] -- A cleaning function part, 710 -- A control section, 711 -- A sterilizing  
water generation part, 712  
719 [ -- An electromagnetic valve, 723 / -- Detergent sprinkling nozzles ] -- A detergent entrance slot,  
720 -- A detergent storage tank, 721 -- A feed pump, 722



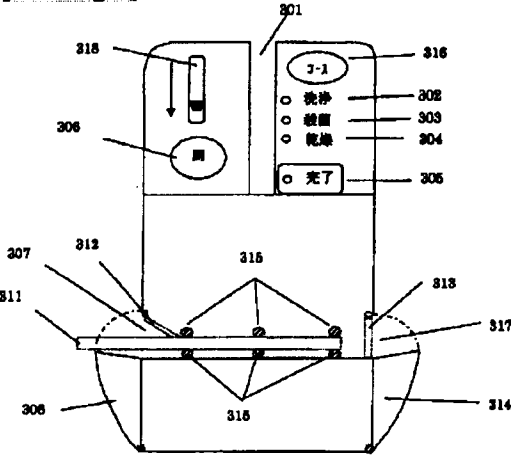
[Drawing 4]



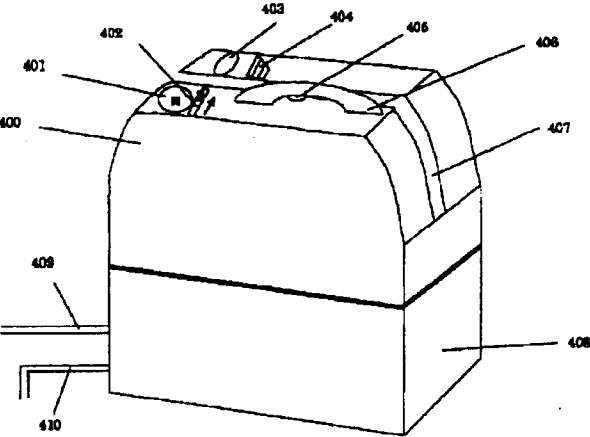
[Drawing 5]



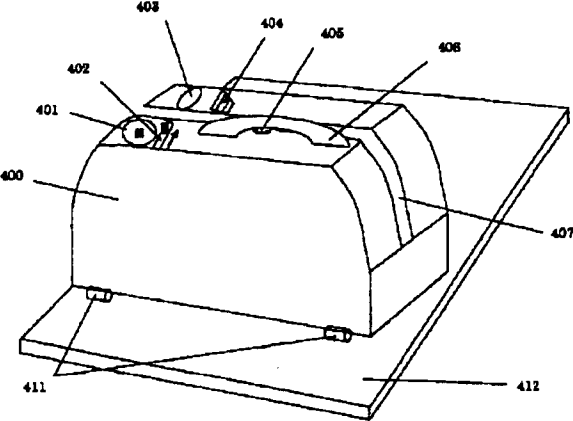
[Drawing 6]



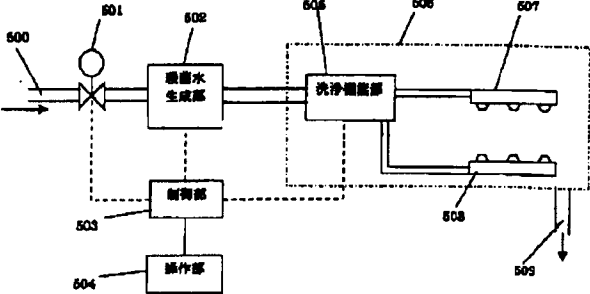
[Drawing 7]



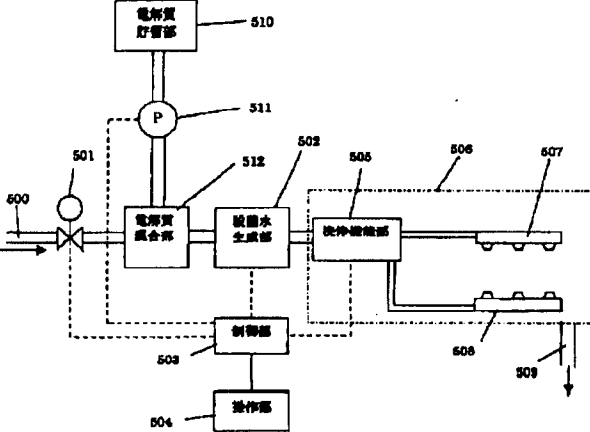
[Drawing 8]



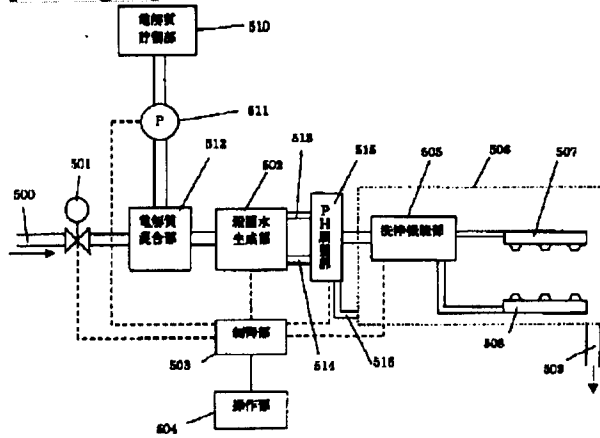
[Drawing 9]



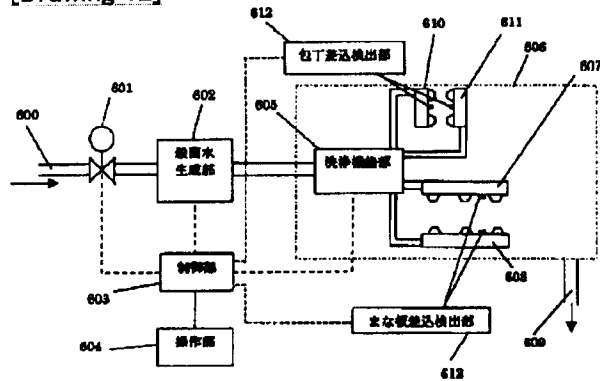
[Drawing 10]



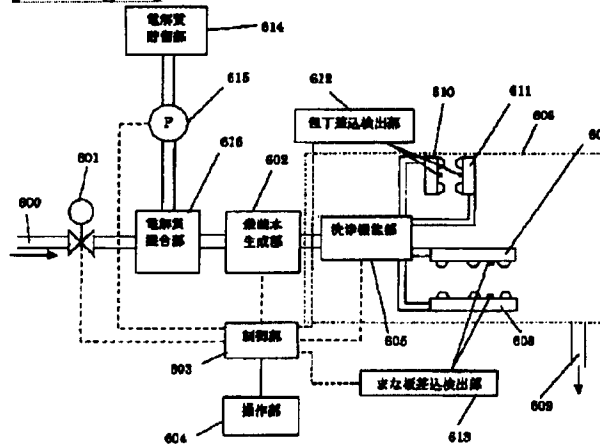
[Drawing 11]



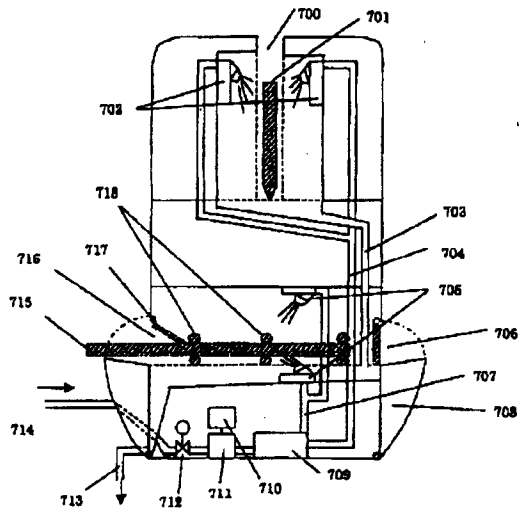
[Drawing 12]



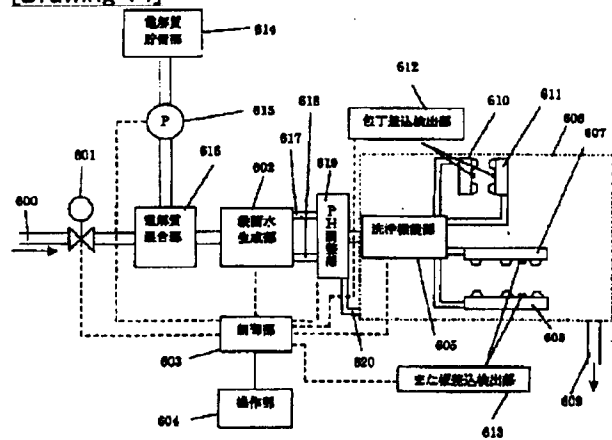
[Drawing 13]



[Drawing 15]



[Drawing 14]



[Drawing 16]

